

RESPONSE UNDER 37 C.F.R. § 1.116  
EXPEDITED PROCEDURE – Art Unit 1742

Attorney Docket No. 29195-8182US

Client Ref No. P96-0013

**Amendments to the Claims:**

Following is a complete listing of the claims pending in the application, as amended:

1-39. (Cancelled)

40. (Currently Amended) A workpiece processing apparatus, comprising:  
~~a support structure~~~~an apparatus frame;~~  
~~a processing fluid supply;~~  
~~a process bowl carried by the support structure and having an inner sidewall;~~  
~~a fluid cup disposed within the said process bowl, the fluid cup having an outer sidewall~~ and defining a fluid flow region between ~~an~~~~the~~ outer sidewall of the fluid cup and ~~an~~~~the~~ inner sidewall of the process bowl, the fluid cup including an upper rim forming an overflow weir over which ~~a~~ processing fluid can enter the fluid flow region, ~~said~~ fluid cup further comprising ~~and~~ a processing fluid inlet that is in fluid communication with ~~the~~~~a~~ processing fluid supply, ~~wherein the fluid cup is configured so that in operation the processing fluid rising~~ ~~rises~~ within the fluid cup, ~~overflows~~ overflowing the weir, and ~~flowing~~ ~~flows~~ through the fluid flow region for recirculation to the processing fluid supply;  
~~an electrode disposed within said~~ ~~in~~ the fluid cup to facilitate electrochemical processing of a workpiece; ~~and~~  
~~a head assembly having a rotor that rotates about an axis and a workpiece holder attached to the rotor, the workpiece holder being configured to hold a workpiece in a processing plane, and the workpiece holder including a plurality of electrical contacts arranged to contact a peripheral region of the workpiece, wherein the electrical contacts have a portion inclined toward the processing plane and a tip configured to engage a microelectronic workpiece, and wherein the head assembly is moveable~~

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along a height adjustment path to place the workpiece in the processing plane~~bowl~~ leveler connected between said process bowl and said frame for leveling said process bowl relative to said frame to facilitate uniform fluid flow across a surface of a workpiece under process.

41-55. (Cancelled)

56. (New) The apparatus of claim 40 wherein the workpiece holder further comprises a support assembly configured to engage a backside of the workpiece and position the workpiece in a substantially horizontal processing plane, and wherein the contacts have a portion inclined upwardly toward the processing plane.

57. (New) The apparatus of claim 40 wherein the contacts have a first portion extending away from the processing plane of the support assembly and a second portion projecting from the first portion to be inclined upwardly toward the processing plane.

58. (New) The apparatus of claim 40 wherein the head moves up/down between a load/unload position and a processing position, and wherein the head holds a workpiece at least substantially horizontal in the processing plane.

59. (New) The apparatus of claim 58 wherein the head rotates in the processing plane.

60. (New) The apparatus of claim 40, further comprising a filter in the fluid cup.

61. (New) The apparatus of claim 60 wherein the filter is configured to filter out 0.1  $\mu$ m particles.

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62. (New) The apparatus of claim 60 wherein the filter is positioned in the cup upstream from the weir such that the fluid passes through the filter before reaching the weir.

63. (New) The apparatus of claim 60 wherein the filter is configured such that fluid passes upwardly through the filter and to the weir.

64. (New) The apparatus of claim 40 wherein the cup has a circular cross-section having a first diameter in a horizontal plane and the bowl has a circular cross-section having a second diameter in the horizontal plane that is greater than the first diameter of the cup.

65. (New) The apparatus of claim 40 wherein the fluid flow region between the cup and the bowl is an annular space.

66. (New) A workpiece processing apparatus, comprising:  
an outer vessel having an inner sidewall;  
an inner vessel in the outer vessel, the inner vessel having an outer sidewall defining a fluid flow region between the outer sidewall and the inner sidewall, and an upper rim defining a weir over which a processing fluid can flow into the fluid flow region, wherein the inner vessel is configured so that in operation a processing fluid rises within the inner vessel, overflows the weir, and flows downwardly through the fluid flow region for recirculation to the processing fluid supply;  
an electrode in the inner vessel; and  
a head assembly having a rotor that rotates about a rotor axis and a workpiece holder attached to the rotor, the workpiece holder being configured to hold a workpiece face down toward the inner vessel in a substantially horizontal processing plane as the rotor rotates about the rotor axis, and

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the workpiece holder including a plurality of electrical contacts arranged to contact a peripheral region of the workpiece.

67. (New) The apparatus of claim 66 wherein the workpiece holder further comprises a support assembly configured to engage a backside of the workpiece and position the workpiece in the processing plane, and wherein the contacts have a portion inclined upwardly toward the processing plane.

68. (New) The apparatus of claim 66 wherein the contacts have a first portion extending away from the processing plane of the support assembly and a second portion projecting from the first portion to be inclined upwardly toward the processing plane.

69. (New) The apparatus of claim 66 wherein the head moves between a load/unload position and the processing plane.

70. (New) The apparatus of claim 66, further comprising a filter in the inner vessel.

71. (New) The apparatus of claim 70 wherein the filter is configured to filter out 0.1  $\mu$ m particles.

72. (New) The apparatus of claim 70 wherein the filter is positioned in the inner vessel upstream from the weir such that the fluid passes through the filter before reaching the weir.

73. (New) The apparatus of claim 70 wherein the filter is configured such that fluid passes upwardly through the filter and to the weir.

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74. (New) The apparatus of claim 70 wherein the inner vessel has a circular cross-section having a first diameter in a horizontal plane and the outer vessel has a circular cross-section having a second diameter in the horizontal plane that is greater than the first diameter of the inner vessel.

75. (New) The apparatus of claim 40 wherein the fluid flow region between the inner vessel and the outer vessel is an annular space.